Prevention of Sports Injuries
Basketball

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PERSONAL FITNESS:

- Pace yourself; don't do too much too soon when pre-conditioning for basketball season.
- A conditioning program with emphasis on aerobic and muscular fitness training should be implemented prior to the beginning of basketball season.
- Begin gradually participating in activities specific to basketball, such as motor skill components of fitness: jumping (rope skipping) and agility/coordination/balance drills. This mode of training will strengthen the connective tissue (muscle, bones, ligaments, and tendons) which will assist the body in accommodating to physical stress. These exercises will also assist with neuromuscular coordination, the ability to integrate the senses – sight, sound, and proprioceptive (knowing the position of your body in space) – with motor function to produce smooth, accurate, and skilled movement.
- Add ankle, shin (anterior tibialis), and soleus strengthening exercises to the basic lower extremity muscular fitness exercise program.
- Participate daily in a complete body stretching program.
- Remember to warm-up and stretch at least 5 – 10 minutes before participating in a basketball activity.
- A continued maintenance program throughout the season would also help prevent injuries.
- Contact a local MWR Trainer for additional information on basketball conditioning. Many MWR Facilities provide safety/injury prevention information to coaches, players, and officials regarding preparation, conditioning, and training proper playing techniques.
- NOTE: Prior injury to the body predisposes one to re-injury of that particular extremity.

EQUIPMENT:

- Jewelry, i.e., rings, necklaces, etc. are not recommended during basketball activity participation.
- Clothing attire that contain pockets are not recommended due to the risk of fingers getting caught/lodged in clothing.
- Protective eye goggles would help prevent ocular injury.
- Basketball playing shoes should be used. Shoes specific to other sports are not recommended.
- Basketball goal must be padded; allow space of at least 8-ft. clear area past goal. Ensure bumper guards are installed correctly on glass boards.

TRAINING / TECHNIQUE:

- The style of play by a basketball team may increase risk of injury; the more contact involved, the higher the incidence for injury.
- Trained coaching staff can impact positively upon basketball injury prevention. Coaches should be able to provide safe information to players on the team regarding preparation, conditioning, and training proper playing techniques.
- Officiated games decrease the risk of injury occurrence. Enforcement of rules assists in decreasing the incidence of injury.

ENVIRONMENT:

- Be aware of the environment around you. Prior to participating in basketball, look for predisposing risk factors on the playing court such as foreign objects, towels, gym bags, water, etc.
- Alcohol consumption should be discouraged during any athletic participation.
- Proper hydration during activity is recommended.

Prevention of Sports Injuries
Flag Football

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PERSONAL FITNESS:

- Pace yourself; don't do too much too soon when conditioning for flag football season.
- A pre-season conditioning program with emphasis on stretching and strength training should be implemented prior to the beginning of a flag football season. When preparing for flag football season, begin participating in activities specific to flag football, such as upper and especially lower body muscular fitness exercises and stretching. This will strengthen the connective tissue (muscle, bones, ligaments, and tendons) and will provide strong support of the lower body. (Most knee injuries occur in the weaker of the two legs).
- Remember to warm-up and stretch at least 5 – 10 minutes before practicing or playing a game.
- NOTE: Prior injury to the body predisposes one to re-injury of that particular extremity.
- NOTE: Athletes with poor muscle strength, particularly in the hamstring, quadriceps, and gastrocnemius muscles are more susceptible to lower body injury.

EQUIPMENT:

- Oral injuries can be prevented through the use of mouth guards/protectors.
- Rubber molded cleats are mandated during military flag football participation.
- Jewelry, i.e., rings, necklaces, etc. are not recommended during flag football activity participation.
- Clothing attire that contains pockets is not recommended due to the risk of fingers getting caught/ lodged in the clothing.

TRAINING / TECHNIQUE:

- Flag football is not considered a contact sport, so risk of injury is lower than participation in American (tackle) football. It's important to note the more contact the player incurs with other players, the higher the risk of injury.
- The style of play by a football team may increase risk of injury; the more contact involved, the higher the incidence for injury.
- A trained coaching staff can impact positively upon flag-football injury prevention. Coaches should be able to provide safe information to players on the team regarding preparation, conditioning, and training proper playing techniques.
- Officiated games decrease the risk of injury occurrence. Enforcement of rules assists in decreasing the incidence of injury.
- Contact a local MWR Trainer or trained coaching staff for additional information on flag football conditioning. Many MWR Facilities provide safety/injury prevention information to coaches, players, and officials regarding preparation, conditioning, and training proper playing techniques.

ENVIRONMENT:

- Be aware of the environment around you. Prior to participating in flag football look for predisposing risk factors on the playing field such as divots, holes, soft drink tops, glass, etc.
- Alcohol consumption should be discouraged during athletic participation.
- Liquid and nutrition replenishment is recommended to decrease exposure-related illness.

REFERENCE: Caine, J., Caine, C., and Lindner, K. Epidemiology of Sports Injuries.. Human Kinetics Publishers, Inc., 1996.

Prevention of Sports Injuries
Softball

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PERSONAL CHARACTERISTICS:

- Common injuries in softball include leg, foot, back, and shoulder injuries.
- A history of prior injury to an extremity indicates an increased risk of re-injury.
- The position played during softball influences the risk of injury. Pitchers suffer more shoulder injuries. Catchers may have a greater number of back and knee injuries due to the amount of time spent in the crouched position. Injuries to the hand are closely associated with the act of catching and is frequently associated with an inability to accurately judge the flight of the ball and to catch the ball within the gloved hand.

PERSONAL FITNESS

- Remember to participate in a total body warm-up and stretch routine at least 5 – 10 minutes prior to participation in softball activities.

EQUIPMENT:

- Rubber molded cleats and the use of baseball hats when batting are equipment items that are mandated during military softball participation.
- Breakaway bases a.k.a. progressive-release bases rather than the use of anchored bases substantially decreases the risk of softball injury when sliding.
- Jewelry, i.e., rings, necklaces, etc. are not recommended during softball activity participation.
- Clothing attire that contain pockets are not recommended due to the risk of fingers getting caught in the piece of clothing.

TRAINING / TECHNIQUE:

- Pre-participation education from trained coaching staff or from MWR Athletic Department staff is important for softball injury prevention measures. Many softball injuries can be prevented through proper coaching techniques: improving the pitching and throwing techniques, instruction in proper sliding and fielding techniques, instruction in avoiding pitched balls while batting, and the proper use of safety equipment.
- NOTE: Many MWR Facilities provide safety/injury prevention information to coaches, players, and officials regarding preparation, conditioning, and training proper playing techniques.
- The more contact the player incurs with other players, (such as sliding, collisions with other players, etc), the higher the risk of injury.

ENVIRONMENT:

- Be aware of the environment around you. Check the playing fields for any predisposing risk factors such as divots, holes, soft drink tops, glass, etc. Fences should be a reasonable distance from fair territory, in good repair, and contain no exposed edges.
- Alcohol consumption should be discouraged during participation in any sporting activity.
- Liquid and nutrition replenishment is recommended to decrease exposure-related illness.
- The size of the field should be proportional to the size of the players.
- A screened – in dugout or similar enclosures will assist in prevention of injury to offensive players and the non-playing members of the defensive team.

REFERENCE: Caine, J., Caine, C., and Lindner, K. Epidemiology of Sport s Injuries.. Human Kinetics Publishers, Inc., 1996.

Prevention of Sports Injuries
Snow Skiing

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PERSONAL FITNESS:

- Pace yourself; don't do too much too soon when conditioning for ski season.
- Be aware of your personal fatigue level. Skiing injury rates peak in mid-afternoon to late afternoon; fatigue is a significant risk factor in skiing injuries.
- When preparing for ski season, begin participating in activities specific to skiing, such as using the indoor ski machine and upper and lower body muscular fitness exercises. This will strengthen the connective tissue (muscle, bones, ligaments, and tendons) and will provide a good aerobic foundation = decreased chances of injury occurrence during snow ski season.
- Beginner skiers or low ability skiers may be more susceptible to injury.
- Remember to warm-up and stretch at least 5 – 10 minutes before skiing.

EQUIPMENT:

- Use equipment advantageous to injury prevention. The design and function of equipment contribute a great deal to the safety of skiing (multimode release bindings and modern midcalf-height boots).
- Note that research is suggesting that new aggressive double-poling and V-skating methods are leading to an increase in soft tissue and bony stress fractures.
- In Alpine skiing injuries, the ski-pole grip may cause an injury to the thumb. Those using a grip with a broad superior plate are more likely to obtain gamekeepers thumb (hyperextension/abduction injury to the thumb).

TRAINING / TECHNIQUE:

- Avoid participation in high risk behaviors, - i.e., showing off, hot-shotting, etc. Stick to skiing as the singular sport you are participating in.
- The ski racing technique, when the pressure to the ski edge is applied posteriorly on the ski, offers less control and places the racer at increased risk for ACL ligament sprains.
- Lunging across the finish line while "sitting back on the tails" places the skier at risk and should be discouraged.
- Contact a local MWR Trainer for additional information on skiing conditioning and safety guidelines.

ENVIRONMENT:

- Be aware of the environment around you. Be cautious of the potential for avalanche. Be aware of potential environmental hazards such as trees, bushes, other skiers, etc.
- Dress for the sport to prevent cold injuries such as hypothermia and frostbite. Layered clothing is recommended. Accessories such as glove liners, masks, etc. are also recommended for skiers.
- Alcohol consumption should be discouraged as it promotes heat loss.
- Liquid and nutrition replenishment is recommended to decrease exposure-related illness.

NOTES:

- Most injuries in skiing are the result of a fall.
- Skiing fatalities most commonly occur due to heart attack, trauma to the head and neck, and hypothermia.
- A history of prior injury to an extremity indicates an increased risk of re-injury.

REFERENCE: Caine, J., Caine, C., and Lindner, K. Epidemiology of Sports Injuries.. Human Kinetics Publishers, Inc., 1996.

Prevention of Sports Injuries
Cycling

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PERSONAL FITNESS:

- Prior to cycling, participate in a gradual conditioning program with emphasis on stretching and strengthening exercises. A continued maintenance program throughout the season is beneficial.
- Remember to warm-up and stretch at least 5 – 10 minutes before cycling.
- Contact a local MWR Trainer for additional information on cycling conditioning. Many MWR Facilities provide safety/injury prevention information regarding preparation, conditioning, and training proper cycling techniques.

EQUIPMENT:

- **The biggest preventable risk factor for bicycle head injury is failure to wear a bicycle helmet!** Studies show that helmets were found to be 85% protective against head injury and 88% protective against brain injury. WEAR A HELMET!
- Proper fit of the bicycle is essential to maximize rider performance and to prevent overuse injuries. At the knee joint, allow approximately a 15 degree angle on full extension. When cycling, the knee should not be placed in full extension or hyperextension.
- Bicycle safety equipment such as lights and reflectors, should be required on all bicycles used for training, recreation, and transportation.
- An "emergency" safety bag is recommended to carry a cell phone or money for a pay phone, insurance card, personal ID card, an emergency contact card, animal protection devices (such as pepper-spray).
- Other beneficial cycling equipment includes wear of brightly colored clothing / safety vest, padded gloves on handlebars, and well-fitted and padded bicycle pants.

TRAINING / TECHNIQUE:

- Be aware of primary risk factors for bicycle injury, and practice safe training techniques to assist in preventing injury occurrence: excessive speed , motor vehicle traffic, fatigue, poor road conditions.
- Heavily loaded bicycles may decrease the ability of the cyclist to respond quickly to the avoidance of potholes, broken pavement, rider fatigue, and excessive speed on downhill portions.
- Increased risk taking behavior (such as high speeds on downhills) may contribute to injury.
- Be cautious at road intersections; know and use bicycle signage for turns.
- Use all senses, especially hearing and seeing, etc. Avoid the use of head radios, and ensure vision is not impaired.

ENVIRONMENT:

- Population based injury rates are the highest during periods when the largest numbers of cyclists are riding: months with good weather, daylight hours, and weekends. Fatal collisions occur most commonly in urban areas. Roads with speed limits of 55 mph or greater produce a higher injury/fatality rate. Weather related injuries can be prevented by the use of appropriate clothing for cold, wet, or hot weather. Racing officials and cyclists should be aware of environmental factors (physical terrain and traffic controls) when selecting cycling courses. Cycle during daylight hours.
- Alcohol consumption should be discouraged during any athletic participation – especially cycling.
- Proper hydration and nutrition during activity is recommended to prevent fatigue and heat illness.

REFERENCE: Caine, J., Caine, C., and Lindner, K. Epidemiology of Sports Injuries.. Human Kinetics Publishers, Inc., 1996.

Prevention of Sports Injuries
Running

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PERSONAL FITNESS:

- Prior to running, participate in a gradual conditioning program with emphasis on balancing out the strength of musculature (correct muscle imbalance). A program consisting of muscular fitness, gradual aerobic conditioning (see training / technique section), and stretching pre/post running is beneficial.
- To reduce risk of stress fractures, a slow and progressive training program that gradually increases strength and endurance of the back and lower extremities is recommended.
- Remember to warm-up and stretch at least 5 – 10 minutes before running.
- Contact a local MWR Trainer for additional information on running conditioning and correct running form. Many MWR Facilities provide safety/injury prevention information regarding preparation, conditioning, and training proper running techniques; imperfections in running style can lead to injury.

EQUIPMENT:

- Proper fitting running shoes are important; replace shoes every 6 months old .
- Orthotics may be beneficial for runners with excessive pronation.

TRAINING / TECHNIQUE:

- Correct training errors. Training should be gradually increased. For beginning runners, alternate day running is recommended. The runner should be able to talk without being short of breath. Monitor both the intensity and the duration of work-outs. Excessive distances, hill running, and speed work may cause common overuse injuries such as iliotibial band friction syndrome and shin splints. A general guideline is to increase running mileage by 10% per week. Monitor the number of days of high intensity workouts and the increase in the training programs. Alternate high effort days with low intensity days of running.
- NOTE: The body responds to excessive stress placed upon it. Even if an experienced runner attempts to increase mileage in a short time, injury may result.
- Discontinue training hard if tired. Prevent running through pain. If it takes more than 48 hours to recover, the workouts may be too long or intense.
- If racing, don't try to make up for lost miles.
- Don't increase mileage more than 10% a year.

ENVIRONMENT:

- Soft and flat running surfaces are recommended; avoid excessive running on cement or asphalt. Uneven ground or slanted roads should be run with caution. .Running on slanted surfaces are responsible for increased injury rates.
- Wear clothing appropriate for weather. For cold weather, dress in layers, cover both head and hands. For hot weather, wear porous clothing. Heat acclimatization usually takes about 2 weeks.
- ACSM recommends that runs/races greater than 10 miles should not be run in temperatures over 82.4 degrees. If the temperature exceeds this, the run should be performed before 0900 or after 1600.
- Alcohol consumption should be discouraged during any athletic participation – especially running.
- Proper hydration during pre-activity and actual activity participation is recommended to prevent fatigue and heat illness. Runners should be trained to recognize early signs of heat injury.
- To run at higher altitudes, allow 3-4 weeks to acclimatize to avoid hypoxia during acute exposure.

REFERENCE: Caine, J., Caine, C., and Lindner, K. Epidemiology of Sports Injuries.. Human Kinetics Publishers, Inc., 1996.